Message

From: From the desk of Drew Kodjak [deskofdrewkodjak@theicct.org]
Sent: 4/22/2020 4:23:30 PM
CC: Drew Kodjak [drewkodjak@gmail.com]
Subject: Lately from the ICCT, April 2020: A roundup of recent research and analysis

Dear Colleagues,

As we all do our best to celebrate Earth Day half-century anniversary during widespread stay at home orders in response to a global pandemic, here is a highly readable summary of our latest research from the last two months.

Warm regards,

Drew

Friends: Like you, the COVID-19 pandemic has disrupted our lives at the ICCT. We are well aware of our good fortune in being able to adapt our routines when so many must carry on in hard and even dangerous circumstances. With that good fortune comes an obligation to continue our work toward clean, sustainable transportation, even while we as individuals do all we can to slow the spread of the virus. Good luck, and good health. —Drew Kodjak

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Technology innovations warrant stronger emission standards. The end of March brought the Trump administration's final Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule. As expected, it rolls back efficiency standards for passenger cars and light-duty trucks dramatically—instead of 5%, the annual rate of improvement required for model years 2021–2026 is now 1.5%. This move is deeply flawed and ignores manifest technological advances. ICCT's independent analysis shows

that manufacturers are already capable of meeting the stricter standards, and estimates are the change will mean almost a billion tonnes of avoidable CO_2 emissions.

Automakers won't necessarily stop innovating, as standards will continue to advance globally. But relaxed U.S. standards are expected to slow the deployment of cost-effective fuel-saving technologies. As John German explained to Consumer Reports, companies are likely to target sales of state-of-the-art vehicles in markets like Europe or China, where regulations are more stringent, while U.S. consumers are left with less-efficient technology for longer. Just how far behind other major vehicle markets do these weakened standards place the United States? This #ChartoftheWeek video illustrates.

Technology advances are no less present in the heavy-duty vehicle (HDV) sector and this can guide the new U.S. rule for HDV engines. The ICCT supports reducing in-use nitrogen oxides (NOx) emissions 90% below the current EPA 2010 limits. It is feasible—the newest emission control technologies are lighter and cheaper than those meeting the current standard—and would avoid thousands of premature deaths. Making sure the reductions are achieved in the real world is critical, and this white paper from November detailed how the current Not-to-Exceed (NTE) protocol falls short in that regard, especially when evaluating HDVs in urban conditions. This short #ChartoftheWeek video has highlights, and soon we'll publish a comparison of the NTE with Europe's moving average window approach, which better captures NOx emissions under the most challenging conditions and can be further improved upon.

Regional strategies for EVs and air quality. Washington State recently passed a zero-emission vehicle (ZEV) regulation similar to California's, another example of how state and local governments are opposing the federal SAFE rollback and supporting the electric vehicle (EV) transition. Stimulating EV sales requires a mixture of incentives, and our new white paper analyzing European cities with strong EV market share found that purchase subsidies and preferential tax structures are common approaches. Another takeaway is the importance of robust public charging networks. That's highlighted in this short #ChartoftheWeek video and covered in this report with C40 Cities, which identified ways city governments can support the continued growth of their charging infrastructure.

The need to improve air quality has also prompted cities to create low-emission zones (LEZ) that deny access to high-polluting vehicles. A recent white paper from the ICCT and The Real Urban Emissions Initiative (TRUE) estimated the future impacts of the Paris LEZ on NOx emissions from passenger cars. On the current schedule, substantial benefits are expected to begin in 2024, when NOx levels are projected to be 76%–87% below 2016 levels. Additionally, accelerating the implementation schedule by just two years would reduce NOx emissions in 2022 by approximately

two-thirds. More highlights in this fact sheet (also en français), and for additional context, see coverage in Flottes Automobiles and on the Avere-France site.

Even the best regional policies don't eliminate the need for national strategy, and this recent white paper puts the spotlight on Canada. After comparing Canada with other auto manufacturing countries, the authors suggest stronger policies to increase domestic demand for EVs and support more investment in EV production in Canada. This would help maintain Canada's prominent position in the global automobile industry and yield significant numbers of EV-related jobs. This Electric Autonomy Canada article is a good summary, and see details in this fact sheet and over at Automotive World, which carried Ben Sharpe's staff blog about how Canada can mitigate the damage from the U.S. SAFE rollback.

Protecting the Arctic and decarbonizing shipping. Years of work toward a ban on the use and carriage for use of heavy fuel oil (HFO) in Arctic waters bore some fruit when member states agreed to draft text at the 7th annual meeting of the International Maritime Organization's (IMO) Pollution Prevention and Response subcommittee in February. But as Bryan Comer explains on the staff blog, a five-year exemption for ships with protected fuel tanks and waivers for Arctic-flagged ships could exclude a majority of the HFO used and carried on ships until July 1, 2029. With these delays, the proposed "ban" offers little immediate protection for the fragile Arctic region, where ship traffic is growing as sea ice dwindles. The ICCT is currently analyzing the impacts of the proposed waivers and exemptions on HFO use and black carbon emissions based on 2019 ship traffic and will submit results to the 76th meeting of IMO's Marine Environment Protection Committee, currently scheduled for October. That's the last chance to change the language in the draft.

Comer also talked to Wired for a recent story about the immense task of decarbonizing the international maritime shipping sector, including container ships. Meeting IMO's ambitious greenhouse gas reduction goals for 2050 requires alternatives to fossil fuels, and in this working paper, we examined the potential of using hydrogen fuel cells for propulsion. The results are promising. They show that 99% of the voyages made along the China–United States shipping corridor in 2015 could be powered by hydrogen with relatively minor changes, such as storing 5% more fuel onboard or making one extra refueling stop. This short #ChartoftheWeek video has details (here with Mandarin Chinese subtitles). For additional context, see articles in Lloyd's List, Bunkerspot, and Mundo Marítimo (Chile).

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Also of note

New two-wheeler vehicle fleet in India for fiscal year 2017–18

One goal, multiple pathways: A review of approaches for transferring on-board fuel

Examines the fleet characteristics and fuel consumption of new two-wheelers sold in India in fiscal year 2017–18.

Charging infrastructure requirements to support electric ride-hailing in U.S. cities

Quantifies the amount and type of charging infrastructure needed to encourage the electrification of ride-hailing fleets in U.S. cities in the 2020–2030 timeframe.

Environmental impacts of modal shift to rail in Tangshan

Evaluates the environmental and energy performance of a modal shift strategy that will shift transport of all iron ore imports from the Tangshan port from truck to rail.

Potential biomass-based diesel production in the United States by 2032

Updates prior research by assessing the availability of feedstocks for U.S. domestic biomass-based diesel production through 2032.

consumption meter data to the European Commission

Analyzes transfer requirements, transfer pathways, and potential use cases for data from on-board fuel and energy consumption monitoring devices in the European Union.

From the staff blog

Felipe Rodriguez, Avoiding a baseline bubble: Truck edition

Anup Bandivadekar, Reducing vehicular air pollution in Delhi: Roadmap for the new government

Peter Mock, Uwe Tietge, Sandra Wappelhorst, The great reveal: A snapshot of EU new passenger car markets in January

Brandon Graver, Is it time to rethink regional jet strategy?

Ben Sharpe, Codifying the Canada-California connection